

out that this symptom complex may complicate various diseases, such as lymphatic leukemia, hemorrhagic smallpox, tuberculosis, nephritis, benzol poisoning, aplastic anemia, and diphtheria; the one feature in common being the low platelet count, and the resulting absence of contractility of the clot. Purpura hemorrhagica of the type described would seem, therefore, to be a symptom and not a disease.

Rhythmic Contraction of Heart-muscle Cells in Culture Media.—Using his adaptation of Harrison's cultural method, M. T. BURROWS (*Münch. med. Woch.*, 1912, lix, 1473) finds that the heart muscle cells of the chick embryo, after they have undergone division and differentiation without the organism, again assume their specific function both as isolated cells and as masses of cells. The rhythmic contraction of such cells corresponds to that of the heart of the living animal. The rhythmic movement was observed not only in the heart-muscle cells of young embryos, but also in the cells of embryos fourteen days old. Parts of the ventricle which are obtained from the older embryos do not themselves contract, although the isolated cells which have wandered out from such masses beat rhythmically. These observations furnish direct evidence in support of the myogenic theory of the heart beat.

SURGERY

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Tubercle Bacilli in the Circulating Blood in Surgical Tuberculosis.—KRABBEL (*Deut. Zeitschr. f. Chir.*, 1913, cxx, 370) examined 30 cases of surgical tuberculosis for the purpose of determining the value of the blood examination in differential diagnosis. Of 18 bone cases which were determined clinically to be surely tuberculous, the findings were positive in 12 or 66.6 per cent. Five cases of lymph node tuberculosis gave only one positive result, or 20 per cent. Four cases of skin, mucous membrane and tendon sheath tuberculosis, gave only one positive result, or 25 per cent. When we assume that a tuberculous infection of the lymph nodes is the result, in most cases, of a direct infection from the mucous membrane of the mouth or the tonsils, and as in skin diseases, it is a local process, it is easy to understand that the bacilli as a rule do not get into the blood. On the other hand, for the occurrence of a bone or joint tuberculosis, it is necessary for the

tuberculous material to first find its way into the circulation and then to be deposited at a site of lessened resistance. This explains why the tubercle bacilli can be found so frequently in these cases. The age of the patient and the duration of the process have little to do with the frequency with which the bacilli are found in the blood, and the finding of them has little to do with the question of the prognosis. The most important question that can be raised is as to whether the presence or absence of the bacilli can aid in the differential diagnosis. In one of Krabbel's cases the positive findings of the bacilli made the diagnosis certain before the histological examination of a specimen obtained at the operation furnished proof of the tuberculous nature of the condition. Krabbel believes that in cases in which there is not yet a clinically demonstrable lung tuberculosis, to point to a bacillemia, the positive findings of the bacilli can be of great importance in making the diagnosis certain.

A Contribution to the Anatomy and Pathology of Striped Muscle Fibers. Experimental Studies on the Theories Concerning Muscle Paralysis and Contracture.—KROH (*Deut. Zeitschr. f. Chir.*, 1913, cxx, 302 and 471) undertook an experimental study of ischemic muscle changes, being stimulated by the previous work of his chief, Bardenheuer, on the same condition. Ischemic contracture is a chronic condition resulting from connective tissue changes and consequent contraction. It is not due exclusively, as generally thought, to the direct influence of a transitory or long continued partial deprivation of oxygen and nourishment, nor is it due exclusively to the toxic effect of an overcharge with carbon dioxide. An important factor is the inactivity of the muscle, induced by the above mentioned directly damaging influences. The circulatory disturbances resulting from these begin and the inactivity completes the process of degenerative change. The circulatory disturbances may be due to a total interruption of the circulation for several hours by constriction of the limb or the occlusion of a large arterial trunk. In such cases a sufficient collateral circulation develops to prevent gangrene. Above all, the interstitial effusion of blood and lymph should be emphasized, since it increases the interstitial pressure. Substantial afferent and efferent branches may succumb to large interstitial effusions. Hemorrhage from very small vessels may lead to total compression of the largest arteries and veins. The efforts at expansion of small, otherwise unimportant interstitial effusions, may prove dangerous when resisted by some unyielding resistance. Thus a plaster of Paris cast may lead to most severe disturbances of the circulation, in some cases even to gangrene. The primary damaging influence of free effusions comes from the occlusion of smaller or larger arterial paths as well as from the suppression of the terminal collateral branches, not wounded but subject to venous pressure. The latter is especially worthy of attention because the retardation in the arterial capillaries interferes with the supply of oxygen and other nourishment and is combined with the direct toxic effect on the tissues which is most marked in the venous system from carbon dioxide. With inactivity the transforming strength of muscle movement is eliminated. In muscle movements are included the active and passive, and included among the latter are